

We claim:

1. An assembly tool for assembly of a first component  
5 of a prosthesis to a second component of the prosthesis for  
use in joint arthroplasty, said tool comprising:

a first member operably associated with the first  
component, said first member defining a first member  
longitudinal axis thereof; and

10 a second member operably associated with the second  
component, said second member defining a second member  
longitudinal axis thereof, said second member adapted to  
provide relative motion of said second member with respect  
to said first member when said second member is rotated  
15 relative to said first member about the second member  
longitudinal axis.

2. The assembly tool of claim 1, wherein the  
relative motion of said second member with respect to said  
20 first member corresponds to the relative motion of the  
first component with respect to the second component to  
urge the second component into engagement with the first  
component.

25 3. The assembly tool of claim 1:  
wherein said first member comprises a first member  
relative motion feature; and

wherein said second member comprises a second member  
relative motion feature, the first member relative motion  
30 feature and the second member relative motion feature

cooperating with each other to provide the relative motion of said first member with respect to said second member.

4. The assembly tool of claim 3, wherein at least one of said first member relative motion feature and said second member relative motion feature comprises threads

5. The assembly tool of claim 4, wherein at least one of said first member relative motion feature and said second member relative motion feature is adapted to provide for a predetermined limited amount of relative motion of said first member with respect to said second member along the second member longitudinal axis.

6. The assembly tool of claim 1, wherein at least one of said first member and said second member comprise a handle extending outwardly from the corresponding one of said first member and said second member.

7. The assembly tool of claim 1:  
wherein said first member comprises a body defining a generally cylindrical longitudinal opening therein; and  
wherein said second member comprises a portion thereof matingly fitted to traverse with the cylindrical longitudinal opening of said first member.

8. The assembly tool of claim 7:  
wherein said first member defines a spiral shaped slot therein extending from the cylindrical longitudinal opening to the outer periphery of said first member; and

wherein said second member defines a pin extending outwardly from said second member and matingly fitted to traverse with the slot so that as said first member is rotated along the first member longitudinal axis relative  
5 said second member, said first member is urged relative the said second member along the first member longitudinal axis.

9. The assembly tool of claim 8, wherein said second  
10 member has a two-piece construction including a spool having a central portion having first and second ends and having first and second restraining portions extending from the first and second ends, respectively, and including a ring contained within the spool and rotatable therewithin,  
15 the ring operably associated with the pin.

10. The assembly tool of claim 1, wherein at least one of said first member and said second member has a two-piece construction.

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11. The assembly tool of claim 1, further comprising a third member cooperable with one of said first member and said second member to urge one of the first component and the second component against one of said first member and  
25 said second member.

12. The assembly tool of claim 1:  
wherein the first component defines an internal taper therein;

wherein the second component includes an external taper thereon and an external thread extending from the external taper; and

5 wherein said second member defines an internal thread for mating engagement with the external thread of the second component.

13. The assembly tool of claim 1, further comprising one of a displacement measuring device and force measuring  
10 device for measuring the corresponding one of the displacement and force related to the relative motion of said second member with respect to said first member.

14. The assembly tool of claim 1, wherein the first  
15 member longitudinal axis and the second member longitudinal axis are coincident.

15. The assembly tool of claim 1, wherein when said second member is rotated about the second member  
20 longitudinal axis, said first member moves relative to said second member along the longitudinal axis of said second member.

16. An assembly tool for assembly of a first component  
25 of a prosthesis to a second component of the prosthesis for use in joint arthroplasty, said tool comprising:

a first member operably associated with the first component, said first member defining a first member longitudinal axis thereof, said first member including a  
30 first member relative motion feature and a body defining a generally cylindrical longitudinal opening therein; and

a second member operably associated with the second component, said second member having a portion thereof matingly fitted to the cylindrical longitudinal opening of said first member, said second member defining a second member longitudinal axis thereof, said second member adapted to provide relative motion of said second member with respect to said first member along the longitudinal axis of said second member when said second member is rotated relative to said first member about the second member longitudinal axis, the second member including a second member relative motion feature, the first member relative motion feature and the second member relative motion feature cooperating with each other to provide the relative motion of said first member with respect to said second member, the relative motion of said second member with respect to said first member corresponding to the relative motion of the first component with respect to the second component to urge the second component into engagement with the first component.

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17. The assembly tool of claim 16, wherein at least one of the first member relative motion feature and the second member relative motion feature comprises threads.

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18. The assembly tool of claim 16, wherein at least one of the first member relative motion feature and the second member relative motion feature are adapted to provide for a predetermined limited amount of relative motion of said first member with respect to said second member along the second member longitudinal axis.

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19. The assembly tool of claim 16:

wherein said first member defines a spiral shaped slot therein extending from the cylindrical longitudinal opening to the outer periphery of said first member; and

5 wherein said second member defines a pin extending outwardly from said second member and matingly fitted to traverse with the slot so that as said first member is rotated along the first member longitudinal axis relative to said second member, said first member is urged relative  
10 to the said second member along the first member longitudinal axis.

20. The assembly tool of claim 19, wherein said second member has a two-piece construction including a spool  
15 having a central portion having first and second ends and having first and second restraining portions extending from the first and second ends, respectively, and including a ring contained within the spool and rotatable therewithin, the ring operably associated with the pin.

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21. A kit for use in joint arthroplasty, said kit comprising:

an implant for implantation at least partially in the medullary canal of a long bone, said implant including a  
25 first component and a second component removably attachable to the first component; and

an assembly tool including a first member operably associated with the first component, the first member defining a first member longitudinal axis thereof and a  
30 second member operably associated with the second component, the second member defining a second member

longitudinal axis thereof, the second member adapted to provide relative motion of the second member with respect to the first member when the second member is rotated relative to the first member about the second member  
5 longitudinal axis.

22. The kit of claim 21:

wherein the first member of said assembly tool comprises a first member relative motion feature; and

10 wherein the second member of said assembly tool comprises a second member relative motion feature, the first member relative motion feature and the second member relative motion feature cooperating with each other to provide the relative motion of the first member with  
15 respect to the second member.

23. The kit of claim 21, wherein at least one of said first member relative motion feature and said second member relative motion feature are adapted to provide for a  
20 predetermined limited amount of relative motion of said first member with respect to said second member along the second member longitudinal axis.

24. The kit of claim 21:

25 wherein the first member of said assembly tool comprises a body defining a generally cylindrical longitudinal opening therein; and

wherein the second member of said assembly tool comprises a portion thereof matingly fitted to traverse  
30 along the cylindrical longitudinal opening of said first member.

25. A method for providing joint arthroplasty comprising:

5 providing an prosthesis including a first component and a second component removably attachable to the first component;

10 providing a instrument having a first member and a second member rotatably moveable with respect to the first member in a plane perpendicular with the first member, the first member cooperable with the first component and the second member cooperable with the second component;

assembling the first component to the second component;

15 connecting the first member of the tool to the first component;

connecting the second member of the tool to the second component; and

20 rotating the first member of the tool with respect to the second member of the tool to secure the first component to the second component.